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COAL FATAL

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DISTRICT B

46

REPORT OF FATAL COAL OUTBURST (BUMP) ACCIDENT

Code
0201

NO. 17 MINE
ISLAND CREEK COAL COMPANY
RED JACKET, MINGO COUNTY, WEST VIRGINIA

November 6, 1969

By

Joseph O. Cook
Mining Engineer

John W. Barton
Mining Engineer

Originating Office - Bureau of Mines
Mount Hope, West Virginia 25880
W. R. Park, District Manager
Coal Mine Safety District B

87 uj

window #5
2:45 P.M.

Raymond Jude
roof bolting machine operator

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INTRODUCTION

This report is based on an investigation made in accordance with the provisions of the Federal Coal Mine Safety Act (66 Stat. 692; 30 U.S.C. Secs. 451-483) as amended.

A coal outburst that occurred about 2:45 p.m., Thursday, November 6, 1969, in a chain pillar off No. 3 main entry, 250 feet inby 2 cross right, resulted in the death of Raymond Jude, roof-bolting machine operator. Jude, age 34, had 16 years mining experience, 3 months of which were at this mine. He is survived by his widow and five dependent children.

The Logan office of the Bureau of Mines was notified of the occurrence on November 6, 1969, by an official of the company, and an investigation of the accident was started the same day.

Information for this report was obtained from statements of employees and mine officials and from an examination of the accident area.

GENERAL INFORMATION

The No. 17 mine, at Red Jacket, Mingo County, West Virginia, is entered through drifts, an air shaft, and a slope into the Cedar Grove coalbed, which averages 72 inches in thickness locally. A total of 136 men, 87 underground and 49 on the surface, is employed on 3 shifts a day, 5 and 6 days a week. The daily production averages 2,300 tons of coal, all loaded by continuous miners.

Mining operations were on a full retreat basis and all mining was confined to the recovery of pillars of coal left for final mining. The coal outburst occurred in an area where barrier pillars, one on each side of the main entries, were each 500 feet wide. The pillar line, consisting of the two barrier pillars and three chain pillars, was 1,200 feet wide. Mining at the time of the accident followed a pattern of developing a set of rooms in one of the barrier pillars and recovering the room pillars before mining in the other barrier pillar. After the barrier rooms had been mined on each side of the main entries, attempts were made to recover the entry chain pillars.

The immediate roof is firm sandstone, which averages 40 feet in thickness. The main roof is sandstone and shale and is overlain by the Upper Cedar Grove coalbed. A separation of approximately 90 feet exists between the two coalbeds in the area of the accident.

Final mining in the superjacent coalbed was completed in 1966, and a study of the mine workings plotted on the separate mine maps indicated that similar projections had been followed in developing the two coalbeds. Also, the mine map of the Upper coalbed showed that chain pillars overlying the accident area had been left unmined.

The floor is a dense, loosely consolidated fire clay which resists plastic flow but heaves readily when subjected to excessive pressure. The coal was a firm structure that resists spalling under normal pressure.

Members of the investigating committee were:

Company Officials

Garland Brewer	Mine Foreman
James Edwards	Shift Foreman
Tony Webb	Section Foreman
James Adkins	Chief Safety Engineer
John Griffin	Division Safety Engineer
Gordon Albright	Safety Inspector
Henry Bowers	Safety Inspector

United Mine Workers of America

F. L. Philyan	Field Representative, District 17
Burnes Cox	President, Local Union 6954
Alfred Steele	Chairman, Mine Committee
George Kennedy	Chairman, Mine Safety Committee

Bill Collins	Member, Mine Safety Committee
Irvin Hatfield	Continuous Miner Operator
Richard Hammond	Continuous Miner Helper

West Virginia Department of Mines

Hobart Rice	Inspector-at-Large
Pat Heatherman	Assistant Inspector-at-Large
Lowell Spears	District Inspector

United States Bureau of Mines

Frank Smith, Jr.	Federal Coal-Mine Inspector
Thomas W. Gay	Federal Coal-Mine Inspector
Joseph O. Cook	Mining Engineer
John W. Barton	Mining Engineer

The general management structure for the No. 17 mine consists of a superintendent, general mine foreman, shift foreman for each shift, and a section foreman for each production crew.

A safety department is maintained by the company for the overall direction of the safety program. The company is a member of the West Virginia Mine Safety Association, and weekly safety meetings are conducted with all employees.

A procedure of reporting and recording all accidents that result in injuries is followed.

The No. 17 mine has an injury frequency rate of 23.65 and a severity rate of 396.06 per million man hours of exposure. The mine has produced 1,370,339 tons of coal since the last fatal accident.

The last Federal inspection was completed September 9, 1969.

DESCRIPTION OF ACCIDENT

The production crew, under the direction of Tony Webb, section foreman, entered the mine at 7:30 a.m. on the day of the accident and arrived in the working area at 7:45 a.m. Webb checked the working places, and, finding no unsafe conditions, assigned the workmen their duties. Mining was to be conducted in a long chain pillar, 60 feet wide and 250 feet long.

The previous production shift had started extracting the chain pillar by mining an 18-foot-wide split through the block on the outby end. A second split was then started at the center of the chain pillar and this split was driven 18 feet wide and 35 feet deep.

These two places were designated as No. 1 and No. 2, with a third place, No. 3, to be mined on the inby end of the pillar. Webb started his crew mining in the No. 2 place while his roof-bolting crew was preparing the No. 3 place. After completion of the mining cycle in No. 2 place, the continuous miner was moved to the No. 3 place and a split, 18 feet wide and 32 feet deep, was mined. The continuous miner was then moved to the No. 1 place where a lift 18 feet wide and 32 feet long was mined towards No. 2. Thereafter, the miner was moved to the No. 2 place where an abutment was to be cut off on the inby right side. The miner had just completed removing the abutment when the coal outburst occurred.

Richard Hammond, continuous miner helper, was struck on the head by flying coal and was momentarily knocked unconscious. He was assisted from the place by Irvin Hatfield, continuous miner operator, and then to the mine-car loading station by Webb. After taking Hammond to the loading station, Webb returned to the face area and checked with other members of the crew to see if there were any other injuries. When Webb entered the No. 3 place, he found Jude lying across the roof-bolting machine. Jude, alive but unconscious, was fouled waist deep in loose coal against the roof-bolting machine. With the aid of the crew, Jude was freed from the loose coal and taken to the surface where he was pronounced dead by Doctor Enoch White.

A study of the mine map indicated that recovery of the chain pillars for the previous 2,100 feet had been sporadic. Apparently, there had been no systematic method established or followed in extracting the chain pillars. The left side barrier block had been recovered to a point 735 feet outby the scene of the accident while the right side barrier pillar had been recovered to a point 110 feet outby. Such mining resulted in the chain pillars being left between two recently pillared-out areas, thus creating excessive pressure on pillars that had been standing for more than 40 years. This potentially hazardous situation was further aggravated by the completion of the Nos. 1 and 2 pillar splits outby the active No. 3 working place.

From all indications, the overlying coalbed contributed little or no adverse pressures and examinations of the adjacent working areas revealed no excessive pressures. Reportedly, there had been smaller, less intense, coal outbursts prior to this accident; such an outburst occurred on November 5, 1969. These danger signals were apparently ignored as there were no visible precautionary measures instituted to guard against the possibility of larger and more violent coal outbursts. At the close of this investigation, the mining equipment was being moved from the affected area and plans were being outlined to even the pillar line.

In addition to the mining methods observed, several substandard roof-support practices were noted. The continuous miner operator had made two 32-foot runs, one in No. 3 and the other in the right split off No. 1, without roof support thus placing himself 12 feet inby the last roof bolts. Turn posts were not installed at the approaches to the pillar splits, and breaker posts were not installed in No. 2 or inby the No. 3 place.

CAUSE OF ACCIDENT

Management's failure to establish and implement a definite systematic method of pillar extraction was the direct cause of this accident. Failure on the part of management to heed the danger signals of previous less intense coal outbursts and institute measures to protect the workmen were contributing factors.

RECOMMENDATIONS

Compliance with the following recommendations may prevent a similar occurrence in the future:

1. Management should make a thorough re-evaluation of the existing roof conditions and mining methods in this mine and forthwith adopt and enforce a systematic method of pillar extraction designed to provide maximum protection for all persons against coal outbursts.

2. Splitting of coal pillars outby the pillar line, particularly under hard massive roof, should not be done except when necessary to accomplish an orderly distribution of stresses.

3. During final mining, complete extraction of coal pillars and partial extraction of other coal pillars should not be attempted on the same pillar line.

The following recommendations, although not directly involved in the coal outburst, are accepted mining practices that should be followed when coal pillars are being mined:

1. No person should be allowed to pass inby the last permanent roof support unless adequate temporary roof support, equal to the permanent support, has been installed.

2. Two rows of breaker posts should be installed at the inby end of all pillar splits before side lifts are started.

3. Turn posts should be installed where side cuts are to be made before such places are started.

ACKNOWLEDGMENT

The cooperation of the company officials and employees, members of the United Mine Workers of America, and representatives of the West Virginia Department of Mines during this investigation is gratefully acknowledged.

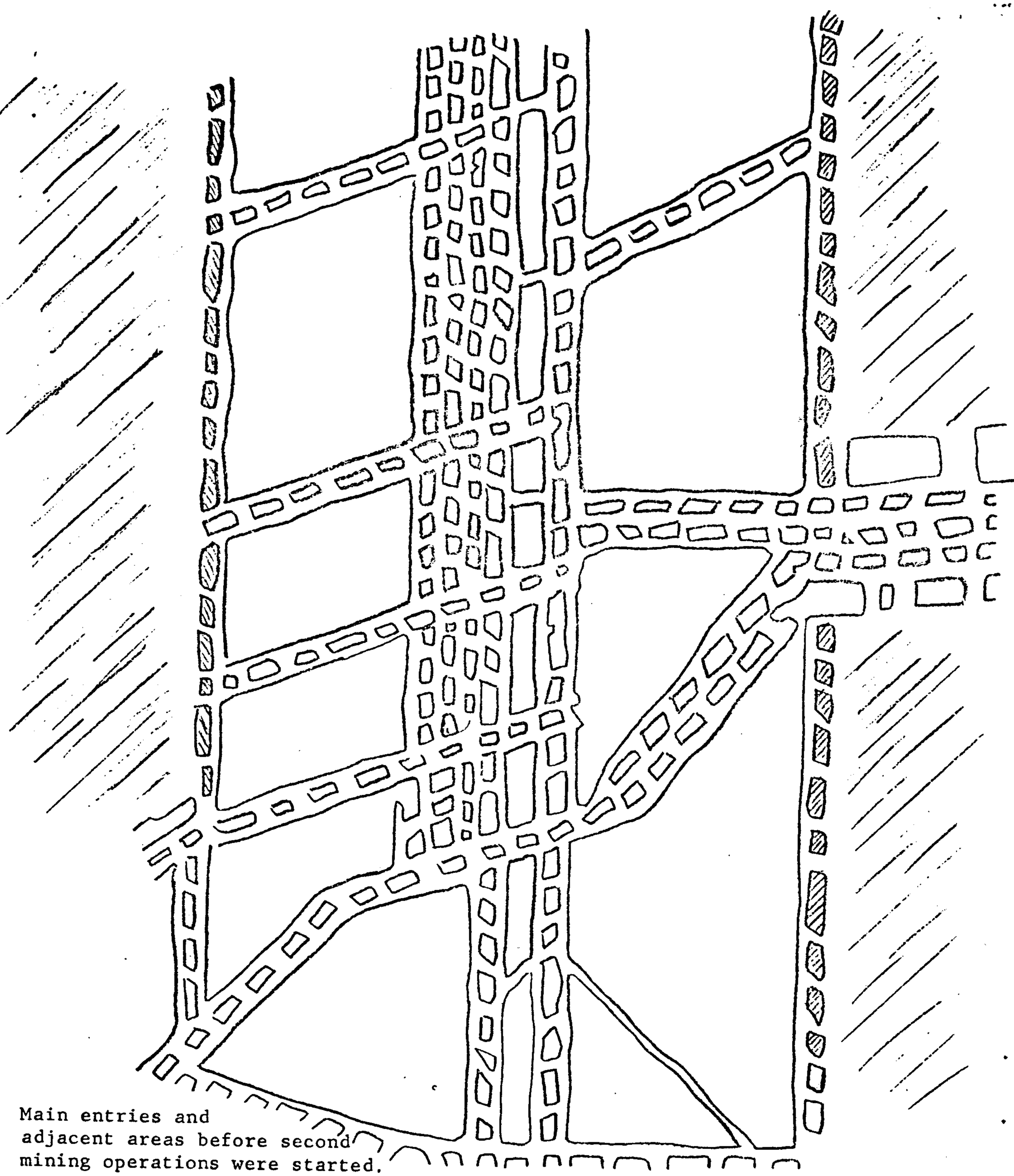
Respectfully submitted,

/s/ Joseph O. Cook

Joseph O. Cook
Mining Engineer

/s/ John W. Barton

John W. Barton
Mining Engineer



Main entries and
adjacent areas before second
mining operations were started.

SKETCH NO. 1

Scale 1" = 300'

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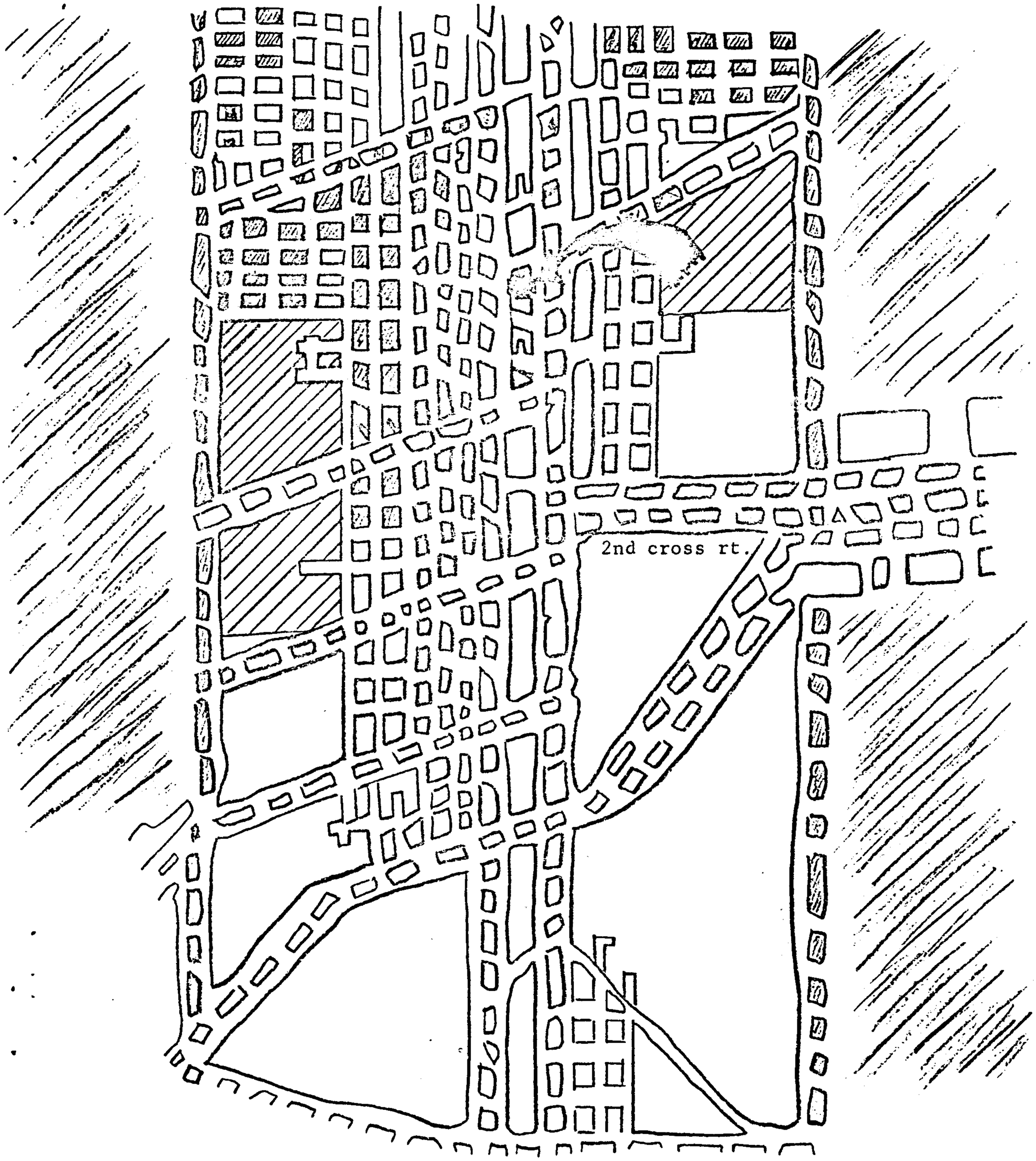
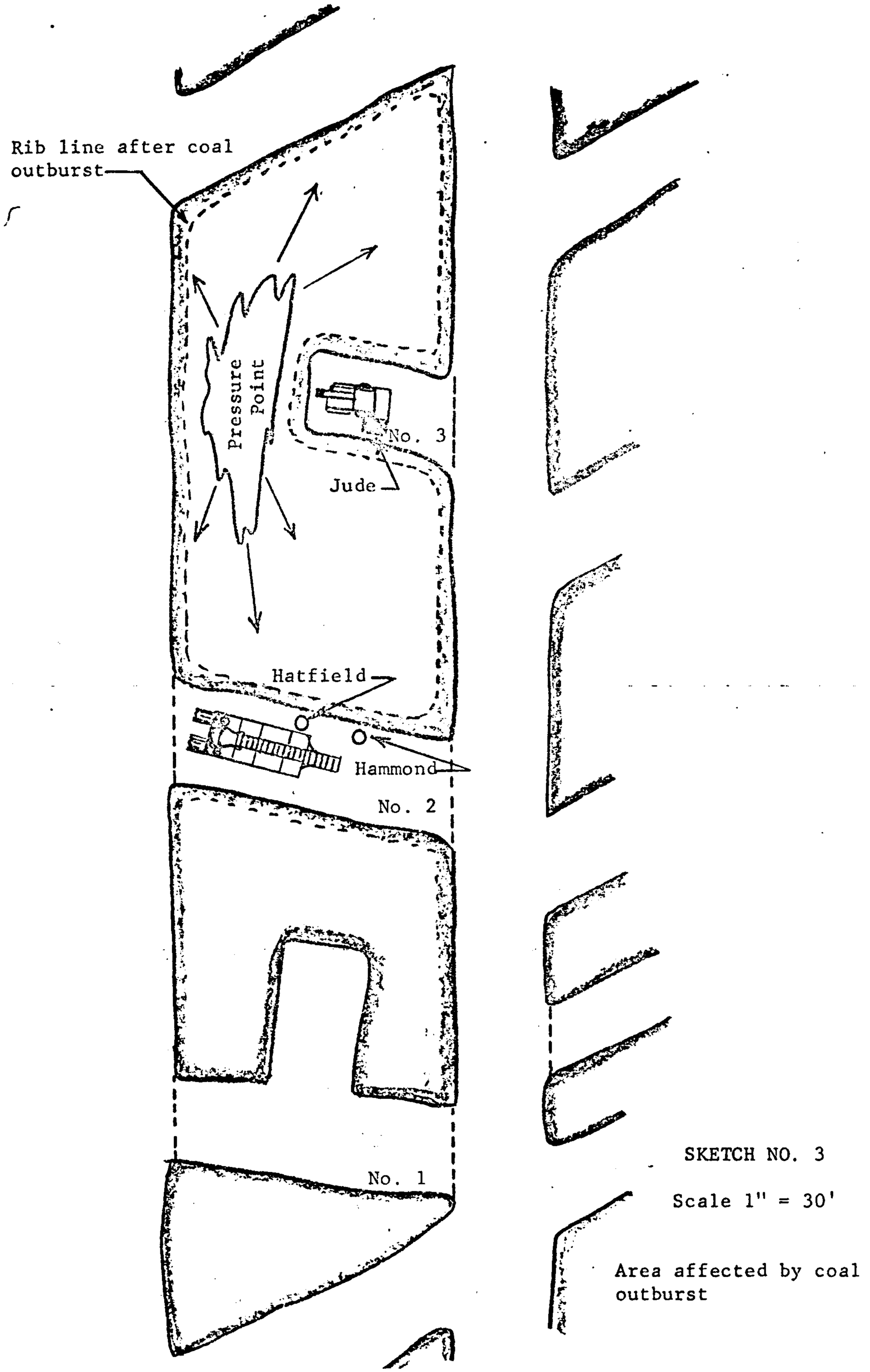


Main entries and adjacent areas
at time of accident

SKETCH NO. 2

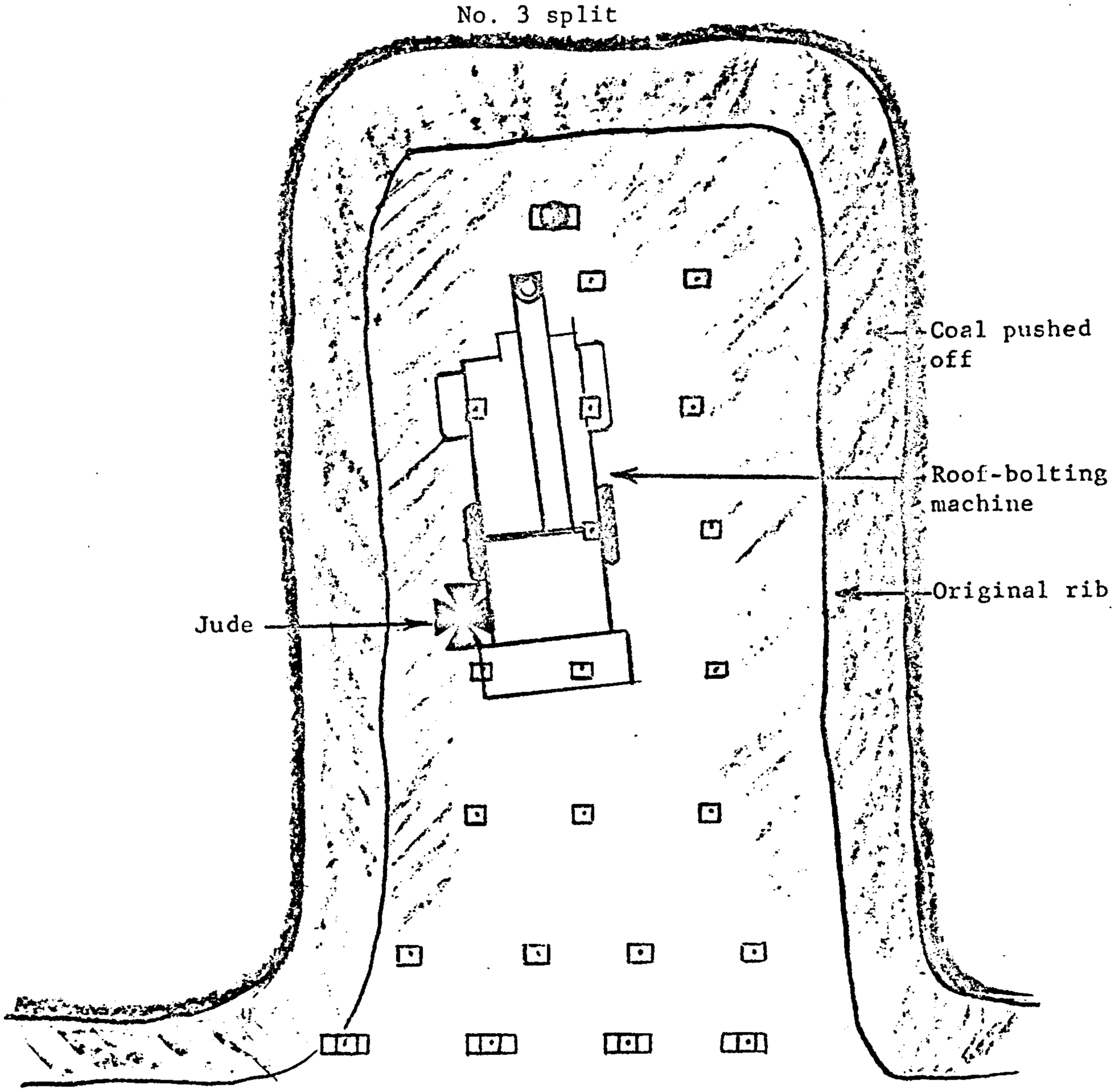
Scale 1" = 300'



SKETCH NO. 3

Scale 1" = 30'

Area affected by coal outburst



LEGEND:

- □ - Bolt
- [□·□] - Bolt through cable blocks
- [●] - Temporary post

SKETCH NO. 4

Scale 1" = 6'